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JUN 16 2015

FWQCB-CVR  
FRESNO, CALIF.

June 15, 2015

Ronald Holcomb  
Central Valley Water Board  
1685 E Street  
Fresno, CA 93706

**Re: CA Water Code Section 13267  
Technical Report**

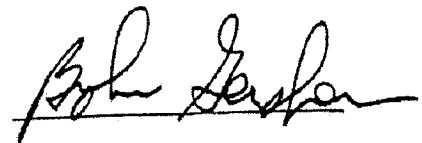
Dear Mr. Holcomb,

We are pleased to submit this technical report pursuant to Section 13267.

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations"

Please feel free to contact me with any questions you may have.

Bob Gershen  
President  
Longview Energy Company



Date

June 15, 2015

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FRESNO, CALIF.



**Longview Energy Company  
Surfluh Lease**

**CA Water Code Section 13267  
Technical Report**

*June 2015*

***Submitted to:***  
Longview Energy Company  
7775 South Madera Avenue  
Kerman, CA 93630

***Prepared by:***  
WZI Inc.  
1717 28<sup>th</sup> Street  
Bakersfield, California 93301

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**EXHIBITS**

Exhibit 1	Generalized Schematic
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**APPENDICES**

Appendix 1	Tentative Cleanup and Abatement Order
Appendix 2	Water Disposition Reports
Appendix 3	Water Sample Laboratory Results

## 1.0 EXECUTIVE SUMMARY

Longview Energy Company operates several oil and gas leases in the Raisin City, CA area. The Surfluh 13 and Surfluh 14 leases are operated through a single water disposal system which injects produced water into two permitted injection wells on the Surfluh 14 lease. The waste water is shipped from the Surfluh 13 tank battery to the Surfluh 14 tank battery for injection (**Exhibit 1**).

On April 1, 2015, the Central Valley Water Board issued a Notice of Violation for discharging to wastewater ponds without filing a Report of Waste Discharge. Under section 13267 of the California Water Code, the Board directed Longview Energy Company to prepare this technical report by June 15, 2015. This report address each required item (A-D) listed in the Notice of Violation. On June 4, 2015 the Board approved a cleanup and abatement order for this site. A copy of the tentative order is attached as **Appendix 1**.

## 2.0 ITEM A: IDENTIFICATION OF DISCHARGES

*"Identification of any discharges of oil field produced waters to land, including but not limited to ponds, since April of 2014 that are not listed in Attachment A;"*

There were three inadvertent discharges of water since April 2014. The three discharges totaled approximately 800 barrels of water and 2 barrels of oil:

### 2.1 April 16, 2015 (Surfluh 14)

Power outage caused the tank to overflow and the call out system failed due to a back up battery failure, this occurred during maintenance activities to replace pipe that required the berm to be breached for access. A temporary berm was placed in the breach overnight. The temporary berm was insufficient to hold the overflow resulting from the power outage knocking out the injection well pump. This was a non-pipe-rupture-related discharge of produced water slated for injection. The discharge was estimated to be approximately 300 barrels of water before operators were on site to manage the event.

### 2.2 January 26, 2015 (Surfluh 13)

The automated notification detected a High Level Alarm on Surfluh 13 Tank Battery. No automated notification was received by the operations personnel due to the failure of a utility transformer coupled with the failure of the backup battery (which was approaching expiration). The discharge was completely contained inside the Surfluh 13 Tank Battery berm and posed no threat of reaching the depression in Section 14. The oil discharge was approximately 2 barrels with approximately 200 barrels of water. The discharge had not been fully remediated at the time of the February 2015 inspection.

### 2.3 December 9, 2014 (Surfluh 14)

A pipeline break occurred in the injection line prior to the split to the two injection wells outside of the bermed area surrounding the Surfluh 14 tank battery. The pressure on the pipeline was 200 psi and the spray from the release of water at that pressure washed out soil and created a channel upstream of the depression. The discharge was approximately 300 barrels of water.

### 2.4 November, 2014 (Production Well Reporting Error)

State Reports submitted show 367,988 bbls water produced, but 386,849 bbls injected. Found that the water allocated to the Ripperdan 77 on the Production Report was incorrect. Value was reported as 15,421 (which is the volume inadvertently duplicated from the Ripperdan 88 value). The correct volume allocated to Ripperdan 77 is 34,282. After this correction, production and injection values balance. No discharge is associated with this event.

After correcting for the reporting error noted in section 2.4 (above), water production and water injection reported to DOGGR balance within a reasonable margin of measurement error. See **Appendix 2: Water Disposition Reports**.

### 3.0 ITEM B: WASTEWATER SAMPLING

*"Collect representative samples of wastewater within each of the ponds. Samples must be analyzed in accordance with the water quality analysis and reporting requirements contained in Attachment B to this Order;*

*If a representative sample cannot feasibly be collected from one or more of the sources discharging to a surface impoundment(s), then a comment will need to be added to the technical report required by this Order demonstrating that collection of a representative sample from a specific source is not feasible within the required timeframe, and propose an alternative sampling procedure and expeditious time schedule for obtaining a representative sample for each source."*

There is no water present in any surface impoundments on this site. At the direction of the Board, water samples were collected from produced water tanks at the Surfluh 14 tank battery on May 28, 2015, and sent to the laboratory for analysis. Results of laboratory testing are presented in **Appendix 3: Water Sample Laboratory Results**. Results of radionuclide testing were not received at the time of this report, and will be submitted under separate cover.

#### 4.0 ITEM C: SURFACE IMPOUNDMENTS

*"All available information for each of the surface impoundment(s), including dimensions (i.e., length, width, and depth), latitude and longitude, Assessor's Parcel Numbers of the lease, duration of the discharge (in months), and the volume of wastewater discharged per year."*

At this time, no surface impoundments exist on the site. At the time of the Board's inspection, there was a depression onsite that occasionally collected rainwater runoff or inadvertent discharges (**Exhibit 2**). This depression has been backfilled, compacted, and restored to match the site grade (**Exhibit 3**). Any historical sumps on the site have been demolished and backfilled to original grade.


#### 5.0 ITEM D: LOCATION MAP

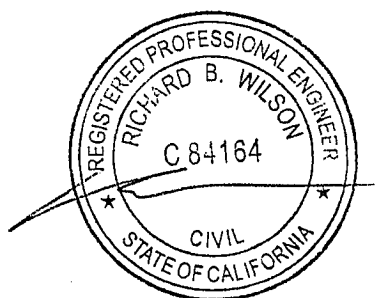
*"A location map that includes the following information:*

- I. All surface impoundment(s) at the Facility,*
- II. Include the boundary lines for all leases at the Facility, and*
- III. Legend with the name of the surface impoundment(s)."*

A location map is included in this report as **Exhibit 4**.

#### 6.0 SIGNATURE AND CERTIFICATION

  
Richard B. Wilson, PE  
Registered Civil Engineer  
State of California No. 84164





**EXHIBITS**



# Generalized Surfluh Lease Schematic

## Producing Wells

Surfluh 13 525-13  
546-13  
547-13  
Hamilton 518-13

## Tank Battery

Surfluh 13  
Lease Facility

Section 13  
Section 14

Surfluh 14 2-14  
4-14  
6-14  
7-14  
10-14  
11-14  
31A-14  
32-14  
63-14  
64-14  
504-14  
507-14  
510-14  
512-14  
538-14  
550-14  
F22-14  
Eagle 19-11  
Sunset

## Injection Wells

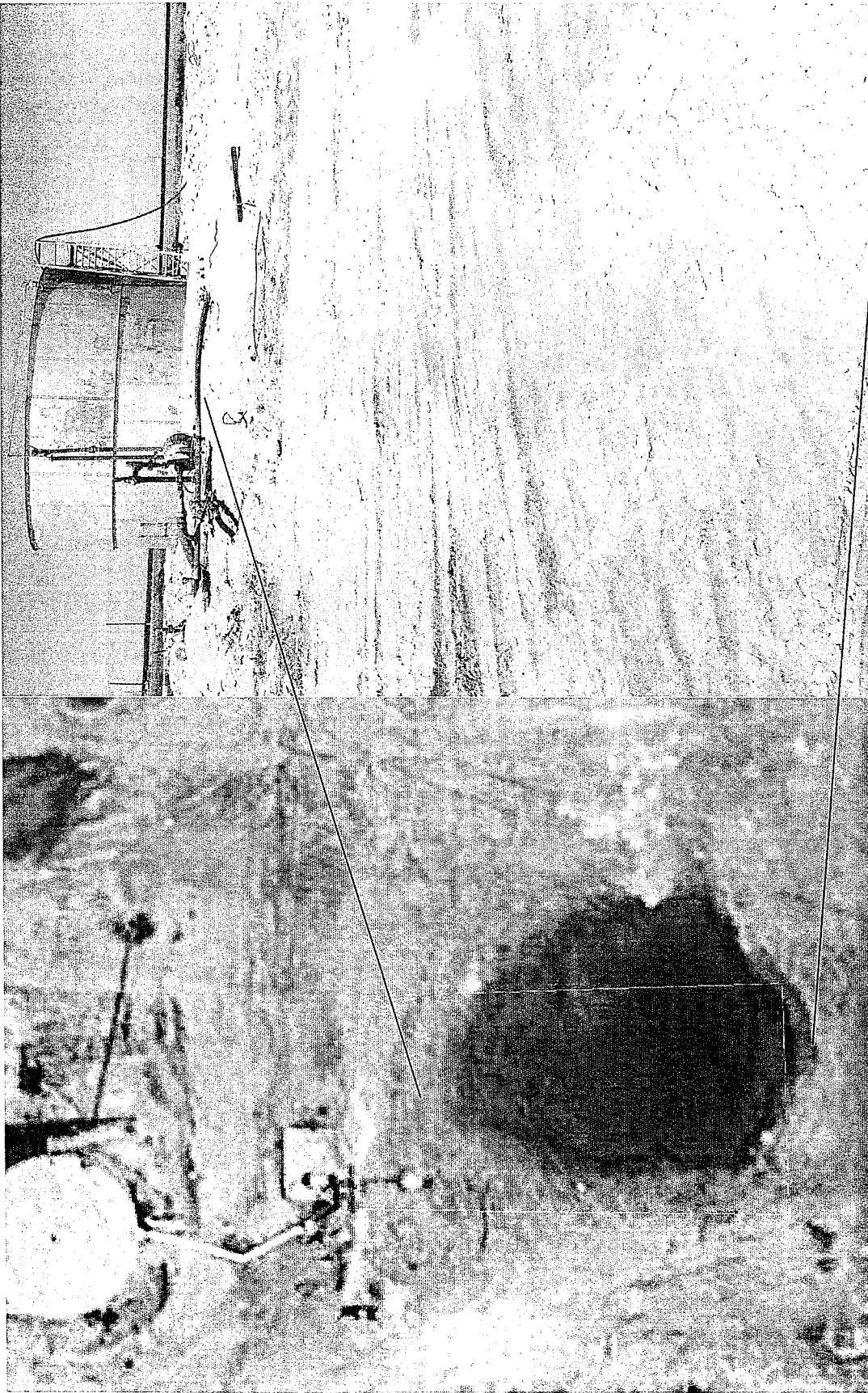
Surfluh 5-14  
Surfluh 8-14

Surfluh 14  
Lease Facility



**WZI** INC.  
BAKERSFIELD, CALIFORNIA

Longview Energy  
Generalized Schematic-  
Surfluh Leases



Aerial

Ground View



**WZI** INC.  
BAKERSFIELD, CALIFORNIA

Longview Energy Production  
Surfluh Lease 14

Pond Depression

DATE: 6/15      LONGVIEWPROD-108      EXHIBIT: 2



**WZI** INC.  
BAKERSFIELD, CALIFORNIA

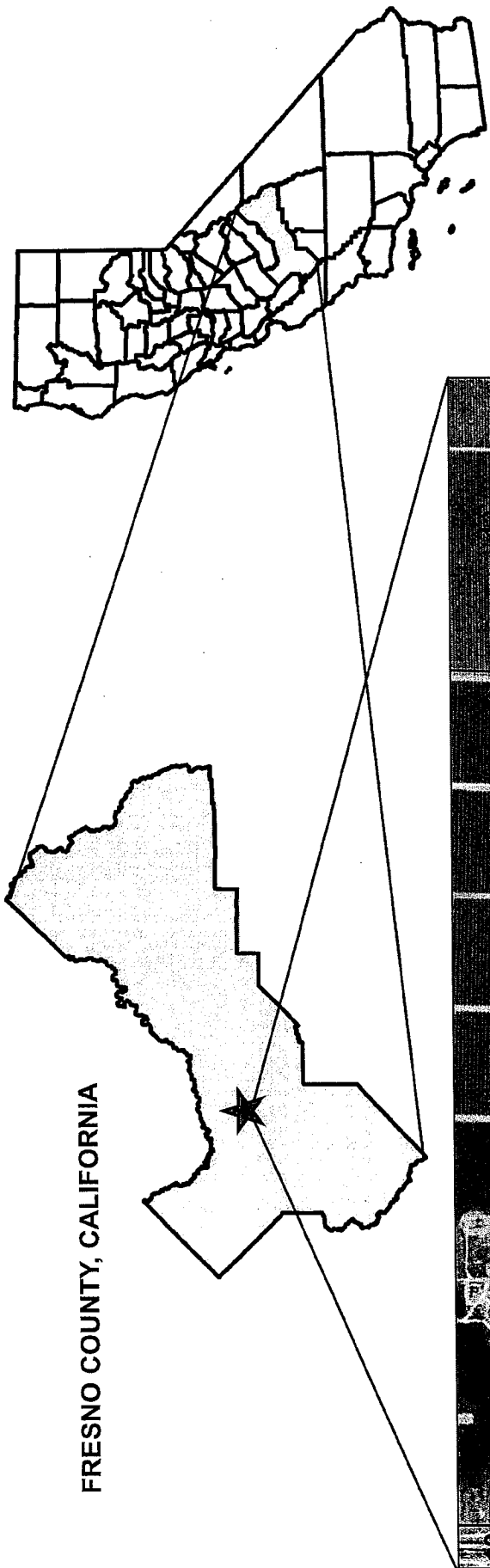
Longview Energy Production  
Surfluh Lease 14

Pond Restoration

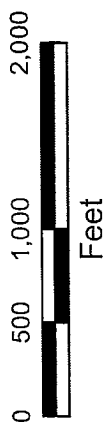
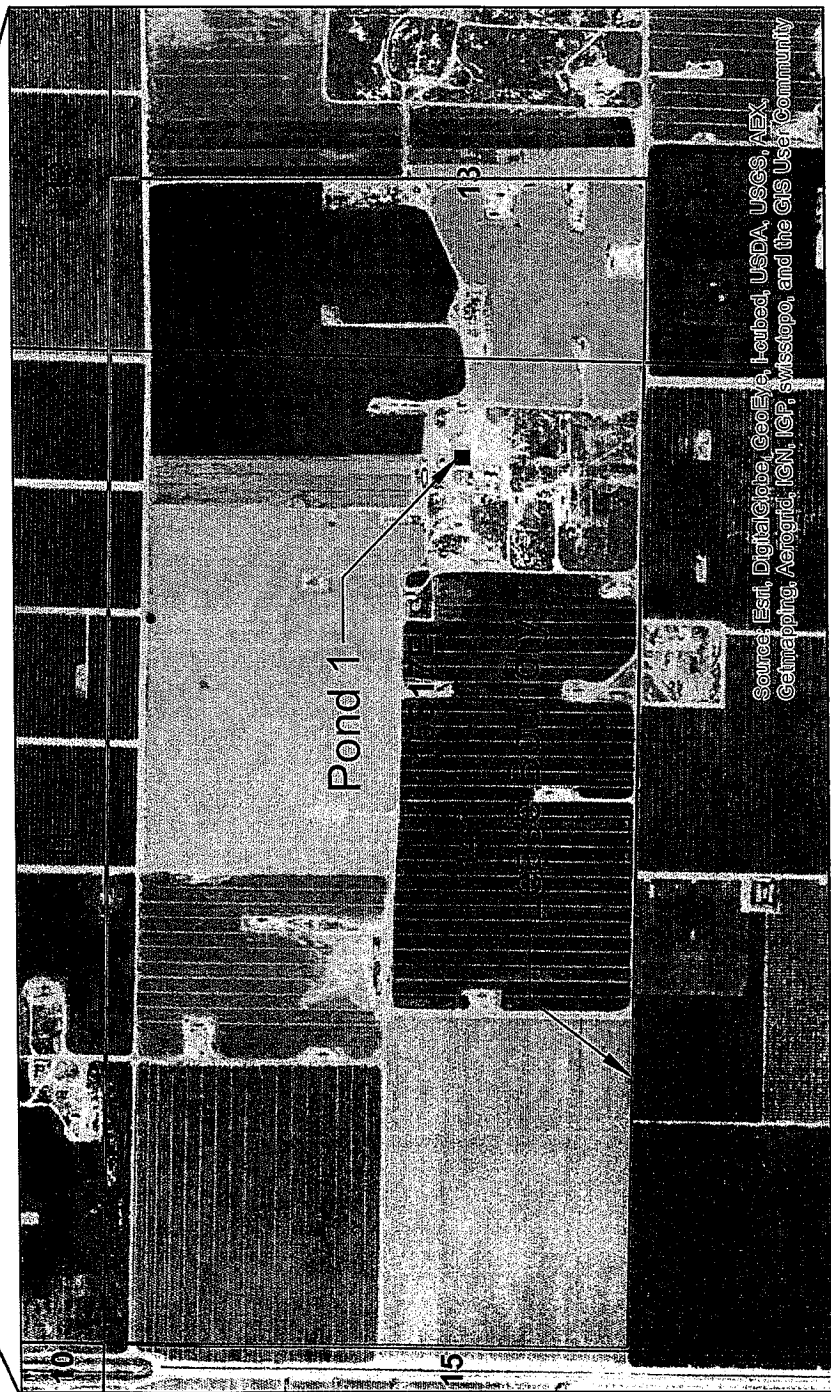
DATE: 6/15


LONGVIEWPROD-108

EXHIBIT: 3



FRESNO COUNTY, CALIFORNIA



	<b>WZI INC</b>		
	BAKERSFIELD, CALIFORNIA		
	Longview Energy Production		
	Surfluh Lease		
Surface Impoundment & Location Map			
DATE:	6/15	EXHIBIT:	4

Source: Esri, DigitalGlobe, GeoEye, USDA, USGS, AEX, Geomapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



**APPENDIX 1**



EDMUND G. BROWN JR.  
GOVERNOR

MATTHEW RODRIGUEZ  
SECRETARY FOR  
ENVIRONMENTAL PROTECTION

## Central Valley Regional Water Quality Control Board

3 April 2015

Mr. Dennis W. Hurt  
Longview Production Company  
7775 South Madera Avenue  
Kerman, CA 93630

### NOTICE TENTATIVE CLEANUP AND ABATEMENT ORDER AND PUBLIC HEARING

FOR

### LONGVIEW PRODUCTION COMPANY SURFLUH LEASE, RAISIN CITY OIL FIELD FRESNO COUNTY

Enclosed for your review is a copy of the tentative cleanup and abatement order (CAO) for the Surfluh Lease in the Raisin City Oil Field. Also enclosed is a notice of public hearing (NOPH) to interested parties. The enclosed NOPH describes the date, time, and place that the Central Valley Regional Water Quality Control Board (Central Valley Water Board) is scheduled to have a hearing to consider the adoption of the tentative CAO.

The tentative CAO may be viewed from the Central Valley Water Board's Internet website at [http://www.waterboards.ca.gov/centralvalley/board\\_decisions/tentative\\_orders/](http://www.waterboards.ca.gov/centralvalley/board_decisions/tentative_orders/).

Any comments or recommendations you may have concerning the tentative WDRs should be submitted to this office in writing by noon on **27 April 2015** in order that consideration may be given them prior to the meeting of the Central Valley Water Board.

KARL E. LONGLEY SCD, P.E., CHAIR | PAMELA C. CREEDON P.E., BCEE, EXECUTIVE OFFICER

1685 E Street, Fresno, CA 93706 | [www.waterboards.ca.gov/centralvalley](http://www.waterboards.ca.gov/centralvalley)

TENTATIVE CLEANUP AND ABATEMENT  
ORDER AND NOPH  
LONGVIEW PRODUCTION COMPANY  
SURFLUH LEASE, RAISIN CITY OIL FIELD  
FRESNO COUNTY

- 2 -

3 April 2015

If you have any questions regarding the tentative WDRs and/or NOPH, please contact Ron Holcomb at (559) 445-6050 or by email at [Ronald.Holcomb@waterboards.ca.gov](mailto:Ronald.Holcomb@waterboards.ca.gov).

*Original signed by:*

Dane S. Johnson  
Senior Engineering Geologist  
PG No. 4239

Enclosures: Tentative Cleanup and Abatement Order  
Notice of Public Hearing (NOPH)

cc: Mike Toland, California Division of Oil, Gas, and Geothermal Resources, Bakersfield

cc: (NOPH only)  
U.S. Environmental Protection Agency, Region 9, San Francisco  
Department of Public Health, Office of Drinking Water, Fresno  
Department of Water Resources, San Joaquin District, Fresno  
Department of Fish and Wildlife, Region IV, Fresno  
San Joaquin Valley Air Pollution Control District, Fresno  
County of Fresno Public Health Department, Fresno  
Editor, Fresno Bee, Fresno  
Hollin Kretzmann, Center for Biological Diversity, San Francisco  
Gustavo Aguirre, Center on Race, Poverty and the Environment, Oakland  
Andrew Grinberg, Clean Water Action, Oakland  
Jhon Arbelaez, Earthworks, Oakland  
Holly Pearen, Environmental Defense Fund, Boulder  
Bill Allayaud, Environmental Working Group, Sacramento  
Annie Pham, Sierra Club, San Francisco  
Blair Knox, California Independent Producers Association, Sacramento  
Les Clark, Independent Oil Producers' Agency, Bakersfield  
Nick Ortiz, Western States Petroleum Association, Bakersfield



**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION**

**CLEANUP AND ABATEMENT ORDER NO. R5-2015-0XXX  
FOR LONGVIEW PRODUCTION COMPANY  
SURFLUH LEASE, RAISIN CITY OIL FIELD  
FRESNO COUNTY**

The California Regional Water Quality Control Board, Central Valley Region (hereafter Central Valley Water Board), finds that:

1. The Longview Production Company (hereinafter Discharger) operates a petroleum production and petroleum wastewater discharge facility at its Surfluh Lease in the Raisin City Oil Field (Surfluh Lease). The Surfluh Lease, approximately seven miles south of Kerman (Assessor's Parcel Number 030-007-71), is located in the southeast quarter of the northeast quarter of Section 14, T15S, R17E, MDB&M (see Attachment A, which is attached hereto and made a part of this Order).
2. The Surfluh Lease contains one wastewater injection well (API No. 01905581) and one pond to which wastewater is periodically released. Wastewater is separated from the extracted crude oil and discharged to the injection well and is allowed to flow to the unlined pond for percolation and evaporation. The pond is approximately 50 feet in diameter (see Attachment B, which is attached hereto and made a part of this Order).
3. The Surfluh Lease is not regulated by Waste Discharge Requirements (WDRs) for the discharge of petroleum production wastewaters. The Discharger has not submitted a Report of Waste Discharge.
4. This Order contains a time schedule to achieve compliance with the California Water Code (Water Code) and the *Water Quality Control Plan for the Tulare Lake Basin Second Edition, Revised January 2004* (Basin Plan), and requires that by 31 December 2016, the Discharger demonstrate that the discharge to these ponds can comply with the applicable laws, policies, and regulations or the discharge will have to cease by that date.
5. The Basin Plan designates beneficial uses, establishes water quality objectives, and contains implementation plans and policies for all waters of the Basin.
6. Surface drainage is toward the James Bypass in the Raisin Hydrologic Area (551.20) of the Tulare Lake Basin. Surface waters in the Raisin Hydrologic Area are designated as Valley Floor Waters. The designated beneficial uses of Valley Floor Waters, as specified in the Basin Plan, are agricultural supply; industrial service and process supply; water contact and non-contact water recreation; warm fresh water habitat; preservation of rare, threatened and endangered species; and groundwater recharge.
7. The Surfluh Lease is in the Delta Mendota Basin Hydrologic Unit, Detailed Analysis Unit (DAU) 235. The designated beneficial uses of the groundwater, as specified in the Basin Plan for DAU 235 are municipal and domestic water supply, agricultural supply, industrial service and process supply, non-contact water recreation, and wildlife habitat.

8. Information obtained from the United States Geological Survey and the California Department of Water Resources identified four groundwater supply wells within about one-mile of the facility.
9. Groundwater samples were obtained from the wells from 1955 to 1973. Chemical analysis of those samples showed the following constituents at the indicated values: From a well about one mile away from the Surfluh Lease:

	<u>Units:</u>	<u>Measured Value Range:</u>
<u>Specific EC:</u>	micromohs per centimeter ( $\mu$ mhos/cm)	482 - 491
<u>Chloride:</u>	milligrams per liter (mg/l)	82 - 86
<u>Boron:</u>	mg/l	None Detected - 0.12

From a well adjacent to the Surfluh Lease:

	<u>Units:</u>	<u>Measured Values:</u>
<u>Specific EC:</u>	$\mu$ mhos/cm	9,000
<u>Chloride:</u>	mg/l	115
<u>Boron:</u>	mg/l	4.5

10. This Cleanup and Abatement Order is based upon: 1) Chapter 5, Enforcement and Implementation commencing with section 13300, of the Porter-Cologne Water Quality Control Act (Water Code Division 7, commencing with section 13000); 2) Water Code section 13267,<sup>1</sup> Investigations; inspections, Chapter 4, Regional Water Quality Control; 3) all applicable provisions of the Basin Plan including beneficial uses, water quality objectives, and implementation plans; 4) California State Water Resources Control Board (State Water Board) Resolution No. 68-16 (*Statement of Policy with Respect to Maintaining High Quality of Waters in California*); 5) State Water Board Resolution No. 92-49 (*Policies and Procedures for Investigation and Cleanup and Abatement of Discharges Under Water Code section 13304*); 6) and all other applicable legal authority.

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<sup>1</sup> Water Code section 13267, subdivision (b)(1) states: "In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge waste within its region, or any citizen or domiciliary, or political agency or entity of this state who has discharged, discharges, or is suspected of having discharged or discharging, or who proposes to discharge, waste outside of its region that could affect the quality of waters within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. In requiring those reports, the regional board shall provide the person with a written explanation with regard to the need for the reports, and shall identify the evidence that supports requiring that person to provide the reports."

11. Discharge of Waste to Land: This information is based upon the 4 February 2014 Central Valley Water Board inspection of the Surfluh Lease. The Basin Plan sets forth the following specific waste constituent limits for discharges of oil field wastewater to unlined ponds:

	<u>Units:</u>	<u>Limitation Value:</u>
<u>Specific EC:</u>	µmhos/cm	1000
<u>Chloride:</u>	mg/l	200
<u>Boron:</u>	mg/l	1

12. The Basin Plan allows discharges of oil field wastewater that exceed the above maximum salinity limits to unlined sumps, stream channels, or surface waters if the Discharger successfully demonstrates to the Central Valley Water Board in a public hearing that the proposed discharge will not substantially affect water quality nor cause a violation of water quality objectives.
13. The results of the analyses of wastewater sampled from the Surfluh Lease pond were reported in the inspection report at the following values for the listed constituents:

	<u>Units:</u>	<u>Measured Value:</u>
<u>Specific EC:</u>	µmhos/cm	41,000
<u>Chloride:</u>	mg/l	15,000
<u>Boron:</u>	mg/l	7.7

14. On 27 March 2015, the Central Valley Water Board issued a Notice of Violation (NOV) to the Discharger (see Attachment C, which is attached hereto and made a part of this Order). The NOV alleged that the discharge was in violation of Section 13260 of the California Water Code for failure to submit a Report of Waste Discharge before discharging waste that could affect the quality of waters of the state, and that the Discharger was discharging wastewater in excess of the numerical limitations specified in the Basin Plan (see Finding No. 10), which is causing, or is threatening to cause a condition of pollution,<sup>2</sup> contamination or nuisance.<sup>3</sup>
15. Section 13304(a) of the Water Code provides that:

*Any person who has discharged or discharges waste into the waters of this state in violation of any waste discharge requirement or other order or prohibition issued by a regional board or the state board, or who has*

<sup>2</sup> "Pollution" is defined by Water Code section 13050, subdivision (l)(1) as, an alteration of the quality of the waters of the state by waste to a degree which unreasonably affects either of the following: (A) The waters for beneficial uses; (B) Facilities which serve these beneficial uses.

<sup>3</sup> "Nuisance" means anything which meets all of the following requirements: (1) Is injurious to health, or is indecent or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property. (2) Affects at the same time an entire community or neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal. (3) Occurs during, or as a result of, the treatment or disposal of wastes. Water Code §13050(m).

*caused or permitted, causes or permits, or threatens to cause or permit any waste to be discharged or deposited where it is, or probably will be, discharged into the waters of the state and creates, or threatens to create, a condition of pollution or nuisance, shall upon order of the regional board, clean up the waste or abate the effects of the waste, or, in the case of threatened pollution or nuisance, take other necessary remedial action, including, but not limited to, overseeing cleanup and abatement efforts. A cleanup and abatement order issued by the state board or a regional board may require the provision of, or payment for, uninterrupted replacement water service, which may include wellhead treatment, to each affected public water supplier or private well owner. Upon failure of any person to comply with the cleanup or abatement order, the Attorney General, at the request of the board, shall petition the superior court for that county for the issuance of an injunction requiring the person to comply with the order. In the suit, the court shall have jurisdiction to grant a prohibitory or mandatory injunction, either preliminary or permanent, as the facts may warrant.*

16. Oil field produced water can contain elevated concentrations of general minerals (especially total dissolved solids and chloride), metals (i.e., arsenic), trace elements (i.e., boron, strontium, thallium, lithium, etc.), petroleum hydrocarbons, polynuclear aromatic hydrocarbons (PAHs), volatile organic compounds (VOCs, i.e., benzene, toluene, ethylbenzene, and xylenes [BTEX]), and radionuclides. The unauthorized discharge of waste containing oil field waste constituents to ground and/or groundwater creates, or threatens to create, a condition of pollution in groundwater, and may result in the degradation of water quality.
17. Land surrounding the Surfluh Lease is being used for agricultural production. Many of the crops are irrigated with groundwater from local supply wells. Based on Ayers and Westcott (1985), irrigation water with a chloride concentration above 350 mg/l can cause severe crop problems. Boron toxicity can occur on sensitive crops at concentrations less than 1 mg/l in irrigation water.
18. Underlying groundwater may be degraded if mixed with oil field wastewater. Oil field wastewater constituents could impair the groundwater for municipal and domestic supply and agricultural supply uses.
19. An investigation is necessary to determine whether the discharge of wastewater in excess of water quality objectives has caused or threatens to cause a threat or condition of pollution or nuisance to groundwater.
20. The following actions will determine the threat and/or impacts to groundwater as a result of the discharges at the Surfluh Lease in violation of the Basin Plan and the California Water Code:
  - a. Development of a work plan to conduct a hydrogeological site characterization and assess potential groundwater degradation by discharges from this facility;

- b. Documentation of the average monthly volume of wastewater discharged to the ponds during the previous year will be submitted, and continued discharge during the investigation will not exceed the average monthly discharge rate calculated for the prior year; and
  - c. This Order requires that if degradation of groundwater due to discharge from any of the ponds is documented, then a work plan to delineate the nature and extent of the release and a plan to remediate the effects of the release must be submitted.
21. The deliverables ordered herein (work plans, signing up for WDRs, investigations, etc. as necessary) are needed to provide information to the Central Valley Water Board regarding (a) the nature and extent of the discharge, (b) the nature and extent of pollution conditions in State waters created by the discharge, (c) the threat to public health posed by the discharge, and (d) appropriate cleanup and abatement measures. The deliverables will enable the Central Valley Water Board to determine the vertical and lateral extent of the discharge, ascertain whether the condition of pollution poses a threat to human health in the vicinity of the Surfluh Lease, and provide technical information to determine the cleanup and abatement measures necessary to bring the Site into compliance with applicable water quality standards. Based on the nature and possible consequences of the discharges, including impacts to groundwater supply, the burden of providing the required information, including costs, bears a reasonable relationship to the need for the required reports, and the benefits to be obtained from the reports. The deadlines set forth herein are reasonable given the need to investigate the potential threat to groundwater quality.
22. In accordance with Water Code section 13267(b), these findings provide the Discharger with a written explanation with regard to the need for remedial action and reports, and identify the evidence that supports the requirement to implement investigative activities, to implement cleanup and abatement activities if needed, and to submit the reports. The Discharger owns a portion of the mineral rights and operates the Surfluh Lease which is subject to this Cleanup and Abatement Order. The technical and monitoring reports required by this Order are necessary to determine compliance with this Cleanup and Abatement Order.
23. Issuance of this Cleanup and Abatement Order is being taken for the protection of the environment and as such is exempt from provisions of the California Environmental Quality Act (CEQA) (Public Resources Code section 21000 et seq.) in accordance with California Code of Regulations, title 14, sections 15061(b)(3), 15306, 15307, 15308, and 15321. This Cleanup and Abatement Order generally requires the Discharger to submit plans for approval prior to implementation of investigative and, if necessary, cleanup activities at the Surfluh Lease. Mere submission of plans is exempt from CEQA as submission will not cause a direct or indirect physical change in the environment and/or is an activity that cannot possibly have a significant effect on the environment. CEQA review at this time would be premature and speculative, as there is simply not enough information concerning the Discharger's proposed remedial activities and possible associated environmental impacts. If the Central Valley Water Board determines that implementation of any plan required by this Cleanup and Abatement Order will have a

significant effect on the environment, the Central Valley Water Board will conduct the necessary and appropriate environmental review prior to the Executive Officer's approval of the applicable plan.

24. The Discharger will bear the costs, including the Central Valley Water Board's costs, of determining whether implementation of any plan required by this Cleanup and Abatement Order will have a significant effect on the environment and, if so, in preparing and handing any documents necessary for environmental review. If necessary, the Discharger and a consultant acceptable to the Central Valley Water Board shall enter into a memorandum of understanding with the Central Valley Water Board regarding such costs prior to undertaking any environmental review.

**IT IS HEREBY ORDERED** that, pursuant to section 13304 and section 13267 of Division 7 of the California Water Code, the Longview Production Company shall cease the discharge of wastewater in violation of applicable laws, policies, and regulations, and clean up and abate the condition of unauthorized discharge in accordance with the schedule below:

1. By **15 July 2015**, the Discharger shall prepare and submit to the Central Valley Water Board a Work Plan with a time schedule proposed by the Discharger and approved by the Assistant Executive Officer. The schedule shall provide the ability to determine whether the discharge can comply with applicable laws, policies, and regulations that would allow the issuance of waste discharge requirements by 31 October 2016. If issuance of waste discharge requirements is not obtained by 31 December 2016, the discharge shall cease. The Work Plan needs to include, but is not limited to, the following tasks:
  - a. Identify all owners of the surface rights and the mineral rights of the Surfluh Lease property.
  - b. Conduct a hydrogeological site characterization to assess the effects of the discharge of high-salinity wastewater on underlying groundwater. The characterization shall be conducted in a manner to utilize acquired information to further assess the impacts of the wastewater discharge on groundwater;
  - c. The hydrogeological characterization, and a determination whether there has been a release of waste constituents to groundwater shall be consistent with the detection monitoring requirements of Title 27, CCR, section 20005 et seq. (Title 27). This includes the development of a Sampling and Analysis Plan (SAP); the location and installation of groundwater monitoring wells; soil sampling locations (if necessary); and the sampling and analysis methods for groundwater and soil samples;
  - d. Monitoring wells installed for the hydrogeological characterization shall be installed at appropriate depths that will allow the collection of representative groundwater samples. Existing groundwater wells documented to be in

appropriate locations, where well depth and construction details can be provided, may be proposed as sampling points;

- e. Collect and submit representative groundwater and soil samples for laboratory analysis for the waste constituents listed in Table I of Monitoring and Reporting Program No. R5-2015-XXXX in accordance with a SAP approved by the Assistant Executive Officer;
- f. Conduct a well survey to identify all water supply wells within one-mile of the ponds. The Discharger shall sample the identified domestic water supply wells and analyze the samples for the waste constituents listed in Table I of Monitoring and Reporting Program No. R5-2015-XXXX. If access to private property is needed, requested, and denied, a demonstration of that is required;
- g. If the investigation determines that a release of wastewater to groundwater or soils has occurred, the hydrogeological characterization shall include a characterization of the nature and extent of the release consistent with the evaluation monitoring program requirements contained in section 20425 of Title 27;
- h. If the investigation determines that a release of wastewater to groundwater or soils has occurred, then following the characterization of the nature and extent of the release, a groundwater remediation program shall be submitted for Assistant Executive Officer review and approval that is consistent with the corrective action program requirements contained in section 20430 of Title 27. This will entail the preparation of an engineering feasibility study followed by a proposed corrective action program;
- i. Include in the report a table that provides the total monthly discharge in barrels and gallons to the sump(s) subject to this Order from 1 January 2013 to the end of the month immediately preceding the date of the report. The table shall include a description of the sources and volume of each individual waste stream going to the pond;
- j. Calculation of the average monthly discharge of wastes to the ponds from 1 June 2014 through 1 June 2015;
- k. The pond shall either be free of oil or effectively screened and maintained to preclude entry of birds or animals;
- l. Pond adjacent to natural drainage courses shall be protected from inundation or washout, or properly closed; and
- m. Based on information acquired during the hydrogeological site characterization, submit a report of waste discharge (RWD) for preparation of waste discharge requirements, if appropriate, consistent with current regulations and policies. It is anticipated that general WDRs for discharges to unlined ponds will be presented to the Central Valley Water Board for adoption by August 2016. Submittal of a

Notice of Intent to come under a general WDR, with the additional technical information, will meet the requirement of a RWD.

2. Beginning **1 September 2015**, or a date approved by the Assistant Executive, and quarterly thereafter until all Work Plan activities are complete, the Discharger shall submit technical reports that provide information to document the Work Plan activities completed to date and to ultimately document that all elements of the Work Plan have been completed. Corrective actions shall be proposed and included in these technical reports when Work Plan activities fail to satisfy any interim or final success criteria.
3. The Discharger shall comply with Monitoring and Reporting Program No. R5-2015-XXXX (MRP), which is part of this Order, and any revisions thereto as ordered by the Assistant Executive Officer. The submission dates of self-monitoring reports shall be no later than the submission date specified in the MRP.
4. The monthly discharge volume of oil field wastewater to the pond shall not exceed the average monthly discharge volume calculated in Order 1.j. above.
5. The Discharger shall not discharge produced fluids to any location on the Surfluh Lease other than a permitted injection well, a permitted pond or disposal facility, or the pond which is the subject of this Order.
6. **All activities in the Work Plan shall be completed** in accordance with time frames included in the Work Plan as approved by the Assistant Executive Officer.
7. With each report required by this Cleanup and Abatement Order, the Discharger shall provide under penalty of perjury under the laws of California a "Certification" statement to the Central Valley Water Board. The "Certification" shall include the following signed statement:

*I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. Pursuant to Water Code section 13350, any person who intentionally or negligently violates a cleanup and abatement order may be liable civilly in an amount which shall not exceed five thousand dollars (\$5,000), but shall not be less than five hundred dollars (\$500), for each day in which the cleanup and abatement order is violated.*

8. If it is determined that discharges from the Surfluh Lease have impacted the beneficial uses of water, the Discharger can be further required upon notification



by the Assistant Executive Officer to provide a replacement water supply or treat the water to allow continued use.

## NOTIFICATIONS

1. **Applicability.** Requirements established pursuant to Water Code sections 13304 and 13267(b) are enforceable when signed by the Assistant Executive Officer of the Central Valley Water Board.
2. **Enforcement Actions.** The Central Valley Water Board reserves its right to take any enforcement action authorized by law for violations, including but not limited to, violations of the terms and conditions of this Cleanup and Abatement Order.
3. **Inspection and Entry.** The Discharger shall allow the Central Valley Water Board or State Water Board, and/or their authorized representatives (including an authorized contractor acting as their representative), upon the presentation of credentials and other documents, as may be required by law, to at reasonable times do the following:
  - a. Enter upon the properties;
  - b. Access and copy any records related to this Cleanup and Abatement Order;
  - c. Inspect and photograph any facilities, equipment, practices, or operations regulated or required by this Cleanup and Abatement Order; and
  - d. Sample or monitor any substances or parameters on-site for the purposes of assuring Cleanup and Abatement Order compliance or as otherwise authorized by the Porter-Cologne Water Quality Control Act.
4. **Potential Liability.** Pursuant to Water Code section 13350, any person who intentionally or negligently violates a cleanup and abatement order may be liable civilly in an amount which shall not exceed five thousand dollars (\$5,000), but shall not be less than five hundred dollars (\$500), for each day in which the cleanup and abatement order is violated. Pursuant to Water Code section 13268, any person failing or refusing to furnish technical or monitoring program reports as required by section 13267, or falsifying any information provided therein, is guilty of a misdemeanor, and may be liable civilly in an amount which shall not exceed one thousand dollars (\$1,000) for each day in which the violation occurs.
5. **Cost Reimbursement.** Pursuant to Water Code section 13304, the Central Valley Water Board is entitled to, and may seek reimbursement for, all reasonable costs it actually incurs to investigate unauthorized discharges of waste and to oversee cleanup of such waste, abatement of the effects thereof, or other remedial action, required by this Cleanup and Abatement Order. The Discharger shall reimburse the State of California for all reasonable costs actually incurred by the Central Valley Water Board to investigate unauthorized discharges of waste and to oversee cleanup of such waste, abatement of the effects thereof, or other remedial action, required by this Cleanup and Abatement Order, according to billing statements prepared from time to time by the

State Water Board.

6. **Waste Management.** The Discharger shall properly manage, store, treat, and dispose of contaminated soils and groundwater which are extracted or disturbed during the investigation in accordance with applicable federal, state, and local laws and regulations. The storage, handling, treatment, or disposal of soil containing waste constituents and polluted groundwater shall not create conditions of pollution, contamination or nuisance as defined in Water Code section 13050(m). The Discharger shall obtain or apply for coverage under waste discharge requirements or a conditional waiver of waste discharge requirements for any discharge of the waste to (a) land for treatment, storage, or disposal or (b) waters of the State.
7. **Requesting Administrative Review by the State Water Board.** Any person aggrieved by an action of the Central Valley Water Board that is subject to review as set forth in Water Code section 13320(a), may petition the State Water Board to review the action. Any petition must be made in accordance with Water Code section 13320 and California Code of Regulations, title 23, section 2050 and following. The State Water Board must receive the petition within thirty (30) days of the date the action was taken, except that if the thirtieth day following the date the action was taken falls on a Saturday, Sunday, or state holiday, then the State Water Board must receive the petition by 5:00 p.m. on the next business day. Copies of the laws and regulations applicable to filing petitions may be found on the internet at [http://www.waterboards.ca.gov/public\\_notices/petitions/water\\_quality/index.shtml](http://www.waterboards.ca.gov/public_notices/petitions/water_quality/index.shtml) or will be provided upon request.
8. **Modifications.** Any modification to this Cleanup and Abatement Order shall be in writing and approved by the Assistant Executive Officer, including any extensions. Any written extension request by the Discharger shall include justification for the delay.
9. **No Limitation of Water Board Authority.** This Cleanup and Abatement Order in no way limits the authority or ability of the Central Valley Water Board to institute additional enforcement actions or to require additional investigation and any necessary cleanup of the property consistent with the Water Code. This Cleanup and Abatement Order may be revised as additional information becomes available.

## REPORTING REQUIREMENTS

1. **Duty to Use Qualified Professionals.** The Discharger shall provide documentation that plans and reports required under this Cleanup and Abatement Order are prepared under the direction of appropriately qualified professionals. Business and Professions Code sections 6735, 7835, and 7835.1 require that engineering and geologic evaluations and judgments be performed by or under the direction of licensed professionals. The Discharger shall include a statement of qualifications and license numbers, if applicable, of the responsible lead professionals in all plans and reports required under this Cleanup and Abatement Order. The lead professional shall sign and affix their license stamp, as applicable, to the report, plan, or document.

2. **Electronic and Paper Media Reporting Requirements.** The Discharger shall submit both electronic and paper copies of all reports required under this Cleanup and Abatement Order including work plans, technical reports, and monitoring reports. Larger documents shall be divided into separate files at logical places in the report to keep file sizes under 150 megabytes. The Discharger shall continue to provide a paper transmittal letter, a paper copy of all figures larger than 8.5 inches by 14 inches (legal size), and an electronic copy (on Compact Disc [CD] or other appropriate media) of all reports to the Central Valley Water Board. All paper correspondence and documents submitted to the Central Valley Water Board must include the following identification numbers in the header or subject line: Geotracker Site ID: T10000006602. The Discharger shall comply with the following reporting requirements for all reports and plans (and amendments thereto) required by this Cleanup and Abatement Order:

- a. Reports and Plans Required by this Cleanup and Abatement Order. The Discharger shall submit one paper and one electronic, searchable Portable Document Format (PDF) copy of all technical reports, monitoring reports, progress reports, and plans required by this Cleanup and Abatement Order. The PDF copy of all the reports shall also be uploaded into the Geotracker database, as required by Reporting Requirement 2.(b)(iv) below.
- b. Electronic Data Submittals to the Central Valley Water Board in compliance with the Cleanup and Abatement Order are required to be submitted electronically via the Internet into the Geotracker database <http://geotracker.waterboards.ca.gov/> (Geotracker Site ID: T10000006602). The electronic data shall be uploaded on or prior to the regulatory due dates set forth in the Cleanup and Abatement Order or addenda thereto. To comply with these requirements, The Discharger shall upload to the Geotracker database the following minimum information:
  - i. Laboratory Analytical Data: Analytical data (including geochemical data) for all waste, soil, and water samples shall be submitted in Electronic Deliverable Format (EDF), which facilitates the transfer of data from the laboratory to the end user. Waste, soil, and water include analytical results of samples collected from the following locations and devices: surface samples, equipment, monitoring wells, boreholes, gas and vapor wells or other collection devices, groundwater, piezometers, and stockpiles.
  - ii. Locational Data: All permanent monitoring locations (monitoring wells, sediment sampling locations, etc.) shall be surveyed with latitude and longitude coordinates in a decimal degree format basin on the North American Datum 1983 ellipsoid, and accurate to within one meter (3 feet).
  - iii. Site Map: Site map or maps which display discharge locations, streets bordering the facility, and sampling locations for all waste, soil, and water samples. The site map is a stand-alone document that may be submitted in various electronic formats. A site map must also be uploaded to show the maximum extent of any soil impact and water pollution. An update to

the site map may be uploaded at any time.

- iv. **Electronic Report:** A complete copy (in character searchable PDF) of all work plans, work plan modifications, assessment, cleanup, and monitoring reports including the signed transmittal letters, professional certifications, and all data presented in the reports.
3. **Oversight Reimbursement.** Reimburse the Central Valley Water Board for reasonable costs associated with oversight of the investigation and remediation of the Site, as provided in Water Code section 13304(c) (1). **By 15 July 2015**, provide the name and address where the invoices shall be sent. Failure to provide a name and address for invoices and/or failure to reimburse the Central Valley Water Board's reasonable oversight costs shall be considered a violation of this Cleanup and Abatement Order.
4. **Signatory Requirements.** All reports required under this Cleanup and Abatement Order shall be signed and certified by The Discharger or by a duly authorized representative and submitted to the Central Valley Water Board. A person is a duly authorized representative only if: 1) The authorization is made in writing by The Discharger; and 2) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.).
5. All monitoring and technical reports required under this Cleanup and Abatement Order shall be submitted to:  
  
California Regional Water Quality Control Board  
Central Valley Region  
1685 E Street, Suite 200  
Fresno, CA 93706  
Attn: Ron Holcomb  
Geotracker Site ID: **T10000006602**
6. **FAILURE TO COMPLY WITH THE PROVISIONS OF THIS CLEANUP AND ABATEMENT ORDER MAY SUBJECT YOU TO FURTHER ENFORCEMENT ACTION, INCLUDING BUT NOT LIMITED TO, ASSESSMENT OF CIVIL LIABILITY UNDER SECTIONS 13268 AND 13350 OF THE WATER CODE AND REFERRAL TO THE DISTRICT ATTORNEY OR ATTORNEY GENERAL FOR INJUNCTIVE RELIEF AND CIVIL OR CRIMINAL LIABILITY.**

Ordered by:

---

PAMELA C. CREEDON  
Executive Officer

---

Date

**LATE REVISIONS – 4 June 2015**

**Item 10.** Longview Production Company, Surfluh Lease, Raisin City Oil Field, Fresno County – *Consideration of Cleanup and Abatement Order*

**Ordered**

Page 6, revise Task 1.b under "IT IS HEREBY ORDERED" as follows:

- 1.b Conduct a hydrogeological site characterization to assess the effects of the discharge of oil field wastes on underlying groundwater. The characterization shall be conducted in a manner to utilize acquired information to further assess the impacts of the wastewater discharge on groundwater. If the Discharger demonstrates that the wastes discharged to the ponds cannot affect the quality of underlying groundwater, the Assistant Executive Officer may rescind by signed letter all or part of the requirements to complete the groundwater investigation and groundwater monitoring portions of this Order.



**APPENDIX 2**

Surfluh 13&14 Water Balance			
Injected		Produced	Balance
DATE	WATERSTEAM	WATERPROD	Water
Feb-15	396598	396598	0
Jan-15	786126	786127	1
Jan-15	389528	389529	1
Dec-14	406656	406656	0
Nov-14	386849	367988	-18861
Oct-14	373280	373279	-1
Sep-14	345182	345182	0
Aug-14	376541	376542	1
Jul-14	347760	347759	-1
Jun-14	336029	336028	-1
May-14	326368	326368	0
Apr-14	354292	354291	-1



# Appendix 2 Water Disposition Reports

LEASE	Well Number	API Number	POOL	Pool Well Type	WATER PRODUCED (BBL)
A	1	01905389	Zlich 08	OG	31,821
B	3-19	01920979	Zlich 08	OG	12,786
Eagle-Sunset	19	01900041	Zlich 08	OG	924
Eagle-Sunset	2	01905501	Zlich 08	OG	30,260
Eagle-Sunset	21	01905595	Zlich 08	OG	33,707
Hamilton	518-13	01924579	Zlich 08	OG	14,093
N.C.C.	7-10	01905484	Zlich 08	OG	19,814
Riparian	35-13	01905552	Zlich 08	OG	956
Riparian	45-13	01905554	Zlich 08	OG	15,125
Riparian	502	01924030	Zlich 08	OG	732
Riparian	503	01924357	Zlich 08	OG	4
Riparian	505	01924374	Zlich 08	OG	5,103
Riparian	509-13	01924623	Zlich 08	OG	3,259
Riparian	513	01924495	Eocene 15	OG	191
Riparian	515	01924531	Eocene 15	OG	16,746
Riparian	544-13	01925328	Zlich 08	OG	1,795
Riparian	56-13	01905558	Eocene 15	OG	21
Riparian	57-13	01905559	Zlich 08	OG	21,141
Riparian	77-13	01905564	Zlich 08	OG	15,421
Riparian	86A-13	01905567	Zlich 08	OG	22,021
Riparian	88-13	01905569	Zlich 08	OG	15,421
Surluh	10-14	01920812	Zlich 08	OG	38,834
Surluh	11-14	01921543	Zlich 08	OG	15,718
Surluh	31A-14	01905577	Zlich 08	OG	149
Surluh	32-14	01905579	Zlich 08	OG	15,329
Surluh	4-14	01905489	Eocene 15	OG	4,683
Surluh	504	01924358	Zlich 08	OG	163
Surluh	507	01924412	Zlich 08	OG	918
Surluh	510	01924414	Zlich 08	OG	33
Surluh	512	01924436	Zlich 08	OG	19
Surluh	525	01924530	Zlich 08	OG	4,998
Surluh	538-14	01925459	Eocene 15	OG	28
Surluh	546	01924529	Eocene 15	OG	74
Surluh	547-13	01925528	Eocene 15	OG	54
Surluh	550-14	01925460	Eocene 15	OG	21,297
Surluh	6-14	01905491	Zlich 08	OG	4,210
Surluh	63-14	01905566	Eocene 15	OG	240

Total 367,988

LEASE	Well Number	API Number	POOL	Pool Well Type	WATER PRODUCED (BBL)
A	1	01905389	Zlich 08	OG	31,821
B	3-19	01920979	Zlich 08	OG	12,786
Eagle-Sunset	19	01900041	Zlich 08	OG	924
Eagle-Sunset	2	01905501	Zlich 08	OG	30,260
Eagle-Sunset	21	01905595	Zlich 08	OG	33,707
Hamilton	518-13	01924579	Zlich 08	OG	14,093
N.C.C.	7-10	01905484	Zlich 08	OG	19,814
Riparian	35-13	01905552	Zlich 08	OG	956
Riparian	45-13	01905554	Zlich 08	OG	15,125
Riparian	502	01924030	Zlich 08	OG	732
Riparian	503	01924357	Zlich 08	OG	4
Riparian	505	01924374	Zlich 08	OG	5,103
Riparian	509-13	01924495	Eocene 15	OG	191
Riparian	513	01924531	Eocene 15	OG	16,746
Riparian	544-13	01925328	Zlich 08	OG	1,795
Riparian	56-13	01905558	Eocene 15	OG	21
Riparian	57-13	01905559	Zlich 08	OG	21,141
Riparian	77-13	01905564	Zlich 08	OG	15,421
Riparian	86A-13	01905567	Zlich 08	OG	22,021
Riparian	88-13	01905569	Zlich 08	OG	15,421
Surluh	10-14	01920812	Zlich 08	OG	38,834
Surluh	11-14	01921543	Zlich 08	OG	15,718
Surluh	31A-14	01905577	Zlich 08	OG	149
Surluh	32-14	01905579	Zlich 08	OG	15,329
Surluh	4-14	01905489	Eocene 15	OG	4,683
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Surluh	6-14	01905491	Zlich 08	OG	4,210
Surluh	63-14	01905566	Eocene 15	OG	240

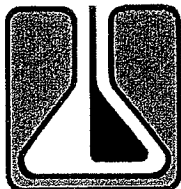
Total 386,849

LEASE	Well Number	API Number	POOL	Pool Well Type	WATER OR STEAM INJECTED (bbl)
A	4	01905392	No Pool Breakdown 00	WD	53,117
Eagle-Sunset	14	01905509	No Pool Breakdown 00	WD	55,258
Eagle-Sunset	20	01905514	No Pool Breakdown 00	WD	
Hamilton	43-13	01905462	No Pool Breakdown 00	WD	
N.C.C.	1-11	01905470	No Pool Breakdown 00	WD	19,888
N.C.C.	6-10	01905483	No Pool Breakdown 00	WD	26
Properties, Inc.	37-18	01905517	No Pool Breakdown 00	WD	
Riparian	82-24	01905528	No Pool Breakdown 00	WD	59,348
Riparian	86-13	01905566	No Pool Breakdown 00	WD	69,809
Riparian	88A-13	01905570	No Pool Breakdown 00	WD	7,540
S.A. & F.L.	25X-29	01923429	No Pool Breakdown 00	WD	
Surluh	31-14	01905578	Zlich 08	WD	
Surluh	42-14	01905581	No Pool Breakdown 00	WD	
Surluh	5-14	01905490	No Pool Breakdown 00	WD	80,883
Surluh	8-14	01920751	No Pool Breakdown 00	WD	40,900

Total 386,849



### **APPENDIX 3**



ZALCO LABORATORIES, INC.

Analytical & Consulting Services

4309 Armour Avenue  
Bakersfield, California 93308

(661) 395-0539  
FAX (661) 395-3069

June 5, 2015

Jesse Frederick  
WZI Inc  
1717 28th St  
Bakersfield, CA 93301

TEL: (661) 326-1112  
FAX: (661) 326-0191

Project ID:  
RE: 1505349

Dear Jesse Frederick:

Zalco Laboratories, Inc. received 1 samples on 5/28/2015 for the analyses presented in the following report.

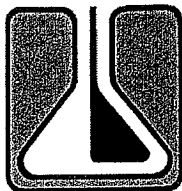
We appreciate your business and look forward to serving you in the future. Please feel free to call our office if you have any questions regarding these test results.

Sincerely,

Juan Magana  
Project Manager  
CC:

NSS: Non Sufficient Sample H: Exceeds Analysis Hold Time TTLC: Total Threshold Limit Concentration STLC: Soluble Threshold Limit Concentration TCLP: Toxicity Characteristic  
Leaching Procedure MCL: Maximum Contaminant Level \*: See Case Narrative  
The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Note: Samples analyzed for regulatory purposes should be put on ice immediately after sampling and received by the laboratory at temperatures between 0-6°C.  
Microbiological analysis requires samples to be at least 4-10°C when received at the laboratory. For additional information regarding the limitations of the method(s) referred to, please call us at 661-395-0539.



# ZALCO LABORATORIES, INC.

Analytical & Consulting Services

4309 Armour Avenue  
Bakersfield, California 93308

(661) 395-0539  
FAX (661) 395-3069

WZI Inc  
1717 28th St  
Bakersfield, CA 93301

Project: RWQCB Oilfield Ponds - 2Q2015  
Project #:  
Attention: Jesse Frederick

Work Order No.: 1505349  
Reported: 06/05/2015  
Received: 05/28/2015 08:00

Lab Sample ID: 1505349-01

Collected By:

Client Sample ID: Longview Surflluh 14 Injection Water Tank

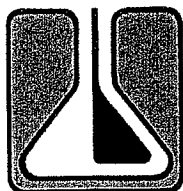
Date Collected: 5/27/2015 1:40:00PM

Analyte	Results	PQL	Units	Flag	Method	Date Prepared	Date Analyzed	Init.
<b>Alkalinity</b>								
Total Alkalinity	130	10	mg/L		SM 2320B	5/28/15	5/28/15	SAM
Bicarbonate (HCO <sub>3</sub> )	130	10	mg/L		SM 2320B	5/28/15	5/28/15	SAM
Carbonate (CO <sub>3</sub> )	<10	10	mg/L		SM 2320B	5/28/15	5/28/15	SAM
Hydroxide (OH)	<10	10	mg/L		SM 2320B	5/28/15	5/28/15	SAM
<b>CAM, Toxicity (17 Metals)</b>								
			<i>TTLIC Limits</i>					
Antimony	<2.0	2.0	500	mg/L	SW846 6010B	5/28/15	5/29/15	SS
Arsenic	<0.20	0.20	500	mg/L	SW846 6010B	5/28/15	5/29/15	SS
Barium	43	1.0	10000	mg/L	SW846 6010B	5/28/15	5/29/15	SS
Beryllium	<0.10	0.10	75	mg/L	SW846 6010B	5/28/15	5/29/15	SS
Cadmium	<0.10	0.10	100	mg/L	SW846 6010B	5/28/15	5/29/15	SS
Chromium	<0.50	0.50	2500	mg/L	SW846 6010B	5/28/15	5/29/15	SS
Cobalt	<1.0	1.0	8000	mg/L	SW846 6010B	5/28/15	5/29/15	SS
Copper	<0.50	0.50	2500	mg/L	SW846 6010B	5/28/15	5/29/15	SS
Lead	<0.50	0.50	1000	mg/L	SW846 6010B	5/28/15	5/29/15	SS
Mercury	<0.0020	0.0020	20	mg/L	SW846 7470A	5/28/15	5/28/15	SS
Molybdenum	<1.0	1.0	3500	mg/L	SW846 6010B	5/28/15	5/29/15	SS
Nickel	<0.50	0.50	2000	mg/L	SW846 6010B	5/28/15	5/29/15	SS
Selenium	<0.50	0.50	100	mg/L	SW846 6010B	5/28/15	5/29/15	SS
Silver	<0.20	0.20	500	mg/L	SW846 6010B	5/28/15	5/29/15	SS
Thallium	<5.0	5.0	700	mg/L	SW846 6010B	5/28/15	5/29/15	SS
Vanadium	<1.0	1.0	2400	mg/L	SW846 6010B	5/28/15	5/29/15	SS
Zinc	<0.50	0.50	5000	mg/L	SW846 6010B	5/28/15	5/29/15	SS
<b>General Chemistry</b>								
			<i>MCL Limits</i>					
Fluoride	130	100	2	mg/L	EPA 300.0	6/4/15	6/4/15	MSS
Nitrate as NO <sub>3</sub>	<20.0	20.0	45	mg/L	EPA 300.0	6/4/15	6/4/15	MSS
Electrical Conductivity	68	0.010		mmhos/cm	SM 2510B	5/28/15	5/28/15	SAM
Bromide	120	1.0		mg/L	EPA 300.0	6/4/15	6/4/15	MSS
Chloride	30000	2000		mg/L	EPA 300.0	6/4/15	6/4/15	MSS
pH	6.96			pH Units	EPA 150.1	5/28/15	5/28/15	SAM
Sulfate as SO <sub>4</sub>	<500	500		mg/L	EPA 300.0	6/4/15	6/4/15	MSS
Total Dissolved Solids	50000	10		mg/L	SM 2540C	6/1/15	6/1/15	MSS

## Hardness

NSS: Non Sufficient Sample H: Exceeds Analysis Hold Time TTLIC: Total Threshold Limit Concentration STLC: Soluble Threshold Limit Concentration TCLP: Toxicity Characteristic Leaching Procedure MCL: Maximum Contaminant Level \*: See Case Narrative  
The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Note: Samples analyzed for regulatory purposes should be put on ice immediately after sampling and received by the laboratory at temperatures between 0-6°C. Microbiological analysis requires samples to be at least 4-10°C when received at the laboratory. For additional information regarding the limitations of the method(s) referred to, please call us at 661-395-0539.

**ZALCO LABORATORIES, INC.**

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FAX (661) 395-3069WZI Inc  
1717 28th St  
Bakersfield, CA 93301Project: RWQCB Oilfield Ponds - 2Q2015  
Project #:  
Attention: Jesse FrederickWork Order No.: 1505349  
Reported: 06/05/2015  
Received: 05/28/2015 08:00

Lab Sample ID: 1505349-01

Collected By:

Client Sample ID: Longview Surflood 14 Injection Water Tank

Date Collected: 5/27/2015 1:40:00PM

Analyte	Results	PQL	Units	Flag	Method	Date Prepared	Date Analyzed	Init.
<b>Hardness</b>								
Hardness (as CaCO <sub>3</sub> )	8500	2.0	mg/L		SM 2340B	5/29/15	5/29/15	SS
<b>Metals</b>								
Lithium	1.3	1.0	mg/L		EPA 200.7	5/29/15	5/29/15	SS
<b>Metals - As Received</b>								
Magnesium	800	0.50	mg/L		EPA 200.7	5/29/15	5/29/15	SS
Potassium	190	5.0	mg/L		EPA 200.7	5/29/15	5/29/15	SS
Sodium	14000	350	mg/L		EPA 200.7	5/29/15	5/29/15	SS
Calcium	2100	0.50	mg/L		EPA 200.7	5/29/15	5/29/15	SS
Iron	8.3	1.0	mg/L		EPA 200.7	5/29/15	5/29/15	SS
Boron	11	1.0	mg/L		EPA 200.7	5/29/15	5/29/15	SS
Barium	41	1.0	mg/L		EPA 200.7	5/29/15	5/29/15	SS
Copper	<0.50	0.50	mg/L		EPA 200.7	5/29/15	5/29/15	SS
Silica (SiO <sub>2</sub> )	63	40	mg/L		EPA 200.7	5/29/15	5/29/15	SS
Strontium	28	1.0	mg/L		EPA 200.7	5/29/15	5/29/15	SS
Manganese	3.1	0.30	mg/L		EPA 200.7	5/29/15	5/29/15	SS
<b>Petroleum Hydrocarbons</b>								
Diesel Range Hydrocarbons	18700	500	mg/kg		SW846 8015B	5/30/15	6/2/15	BIG
Gasoline Range Hydrocarbons	5.70	0.250	mg/L		SW846 8015B	6/3/15	6/3/15	HLP
Motor Oil Range Hydrocarbons	22900	1250	mg/kg		SW846 8015B	5/30/15	6/2/15	BIG

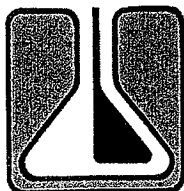
Surrogates	% Recovery	Recovery Limits	Flag
a,a,a-Trifluorotoluene	117	69-125	6/3/15 9:37

**Semivolatile Organic Compounds**

Indeno(1,2,3-cd)pyrene	<12.5	12.5	ug/L	SW846 8270C	5/28/15	5/29/15	JMM
Naphthalene	35.4	12.5	ug/L	SW846 8270C	5/28/15	5/29/15	JMM
Acenaphthylene	<12.5	12.5	ug/L	SW846 8270C	5/28/15	5/29/15	JMM
Acenaphthene	<12.5	12.5	ug/L	SW846 8270C	5/28/15	5/29/15	JMM
Fluorene	6.3	12.5	ug/L	SW846 8270C	5/28/15	5/29/15	JMM
Phenanthrene	6.7	12.5	ug/L	SW846 8270C	5/28/15	5/29/15	JMM
Anthracene	<12.5	12.5	ug/L	SW846 8270C	5/28/15	5/29/15	JMM

NSS: Non Sufficient Sample H: Exceeds Analysis Hold Time TTLC: Total Threshold Limit Concentration STLC: Soluble Threshold Limit Concentration TCLP: Toxicity Characteristic Leaching Procedure MCL: Maximum Contaminant Level \*: See Case Narrative  
The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Note: Samples analyzed for regulatory purposes should be put on ice immediately after sampling and received by the laboratory at temperatures between 0-6°C. Microbiological analysis requires samples to be at least 4-10°C when received at the laboratory. For additional information regarding the limitations of the method(s) referred to, please call us at 661-395-0539.

**ZALCO LABORATORIES, INC.**

Analytical &amp; Consulting Services

4309 Armour Avenue  
Bakersfield, California 93308(661) 395-0539  
FAX (661) 395-3069WZI Inc  
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<b>Semivolatile Organic Compounds</b>								
Fluoranthene	<12.5	12.5	ug/L		SW846 8270C	5/28/15	5/29/15	JMM
Pyrene	<12.5	12.5	ug/L		SW846 8270C	5/28/15	5/29/15	JMM
Benzo (a) anthracene	<12.5	12.5	ug/L		SW846 8270C	5/28/15	5/29/15	JMM
Chrysene	<12.5	12.5	ug/L		SW846 8270C	5/28/15	5/29/15	JMM
Benzo (b) fluoranthene	<12.5	12.5	ug/L		SW846 8270C	5/28/15	5/29/15	JMM
Benzo (k) fluoranthene	<12.5	12.5	ug/L		SW846 8270C	5/28/15	5/29/15	JMM
Benzo (a) pyrene	<12.5	12.5	ug/L		SW846 8270C	5/28/15	5/29/15	JMM
Dibenz (a,h) anthracene	<12.5	12.5	ug/L		SW846 8270C	5/28/15	5/29/15	JMM
Benzo (g,h,i) perylene	<12.5	12.5	ug/L		SW846 8270C	5/28/15	5/29/15	JMM

Surrogates	% Recovery	Recovery Limits	Flag
Nitrobenzene-d5	14.6	0-95	5/29/15 11:02
2-Fluorobiphenyl	11.9	0-92	5/29/15 11:02
Terphenyl-d14	13.3	0-100	5/29/15 11:02

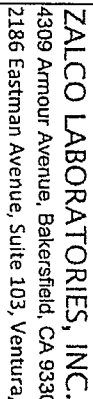
**Volatile Organic Compounds**

m,p-Xylene	207	25.0	ug/L	SW846 8260B	6/3/15	6/3/15	HLP
Benzene	238	25.0	ug/L	SW846 8260B	6/3/15	6/3/15	HLP
Xylenes, total	303		ug/L	SW846 8260B	6/3/15	6/3/15	HLP
Methyl tert-Butyl Ether	<5.00	5.00	ug/L	SW846 8260B	6/3/15	6/3/15	HLP
Ethylbenzene	59.6	25.0	ug/L	SW846 8260B	6/3/15	6/3/15	HLP
Toluene	520	25.0	ug/L	SW846 8260B	6/3/15	6/3/15	HLP
o-Xylene	96.2	25.0	ug/L	SW846 8260B	6/3/15	6/3/15	HLP

Surrogates	% Recovery	Recovery Limits	Flag
1,2-Dichloroethane-d4	109	89-165	6/3/15 9:14
Toluene-d8	88.9	65-124	6/3/15 9:14
4-Bromofluorobenzene	108	94-114	6/3/15 9:14

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2186 Eastman Avenue, Suite 103, Ventura, CA 93003, (805) 477-0114, Fax (805)

[www.zalcolabs.com](http://www.zalcolabs.com)

ANALYSIS REQUESTED

Client PO:	
Project ID:	
Quote ID:	

CHAIN OF CUSTODY, ID# 1505349

COMMENTS					
Turnaround Time:					
Routine (10 working days) <input type="checkbox"/>					
Rush By	<input checked="" type="checkbox"/> 5	Working Days			
EDT	<input type="checkbox"/>				
State Form	<input type="checkbox"/>				
EMAIL	X				
<b>Number of Containers</b>					
<b>Type of Containers</b>					
<b>Sample Matrix</b>					
<b>Notes</b>					
<b>RUSH!</b>					

Samples Discarded 30 days after results unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client's expense.

**Sample Type key:**  
Aq-Aqueous; BS-Biosolid; DW-Drinking Water; GW-Groundwater; G-Gas  
LPG-Liquid Petroleum Gas; OL-Oil; P-Petroleum; S-Solid/Soil; ST-Slum Water  
WW-Wastewater